

## **Patent Claims**

1. An electrode catheter for defibrillation or mapping or ablation of cardiac tissue, having a terminal at a proximal end of the electrode catheter and one or more sensing or treatment electrodes or both on or in proximity to the distal end of the electrode catheter, and having at least one electrical conductor, via which the particular sensing or treatment electrode is electrically connected to the terminal,  
characterized in that  
the electrical conductor is made of carbon and the electrode catheter is constructed as capable of use in the course of magnetic resonance tomography and is implemented for connection to an electrophysiology therapy device and has at least one defibrillation electrode or at least one sensing electrode for recording and analyzing cardiac tissue potentials or at least one treatment electrode for delivering high-frequency currents for tissue erosion (ablation).
2. The electrode catheter according to Claim 1, characterized in that the electrical conductor is made of carbon fibers, which comprise multiple filaments.
3. The electrode catheter according to Claim 2, characterized in that the electrical conductor is enclosed by an insulating sleeve made of a flexible plastic which is compatible with magnetic resonance.
4. The electrode catheter according to Claim 3, characterized in that the insulating sleeve contains an x-ray contrast agent.
5. The electrode catheter according to Claim 4, characterized in that the x-ray contrast agent contains barium sulfate or metal particles.
6. The electrode catheter according to one of Claims 3 through 5, characterized in that the insulating sleeve is largely made of silicone.

7. The electrode catheter according to Claim 2, characterized in that the electrical conductor has a cross-section between 0.5 mm and 1.5 mm and a length between 40 and 120 cm.
8. The electrode catheter according to Claim 2, characterized in that the filaments have a diameter between 5 $\mu$ m and 7 $\mu$ m.
9. The electrode catheter according to Claim 1, characterized in that the electrode catheter is implemented as a defibrillation electrode for connection to an implantable defibrillator.
10. The electrode catheter according to Claim 1, characterized in that the electrode catheter is implemented as an electrophysiology catheter for mapping or ablation of cardiac tissue or both.
11. A method for electrotherapy of a heart, characterized in that the electrotherapy is performed during magnetic resonance tomography using an electrode catheter which is constructed as compatible with magnetic resonance using an electrical conductor made of carbon.
12. The method for electrotherapy of a heart according to Claim 11, characterized in that the electrotherapy comprises tissue erosion of the cardiac tissue by delivering high-frequency currents to the cardiac tissue.
13. The method for electrotherapy of a heart according to Claim 11, characterized in that the electrotherapy comprises electrostimulation of cardiac tissue.
14. A method for detecting electrical potentials of cardiac tissue, characterized in that the detection is performed during magnetic resonance tomography using an electrode catheter which is constructed as compatible with magnetic resonance using an electrical conductor made of carbon.